



Legislative Comparison of Multipollutant Proposals S. 150, S. 131, and S. 843.¹ Version 06/03/05.

Features	S. 150 – Jeffords (109th)	S. 131 – Clear Skies (109th)²	S. 843 – Carper (108th)
Affected Facilities	Electricity-generating facilities with a nameplate capacity of 15 MW or more.	Electricity-generating facilities with a nameplate capacity of 25 MW or more.	Electricity-generating facilities with a nameplate capacity greater than 25 MW.
National Annual Allowance Allocation Caps			
Sulfur Dioxide (SO₂)	2.25 million tons in 2010. Split into two regions. ³	4.5 million tons in 2010. 3.0 million tons in 2018.	4.5 million tons in 2009. 3.5 million tons in 2013. 2.25 million tons in 2016.
Nitrogen Oxides (NO_x)	1.51 million tons in 2010.	2.19 million tons in 2008. 1.79 million tons in 2018. Split into two regions. ⁴	1.87 million tons in 2009. 1.7 million tons in 2013.
Mercury	5 tons in 2009. Facility specific emissions limitations without trading.	34 tons in 2010. 15 tons in 2018.	24 tons in 2009. 10 tons in 2013. Facility-specific limitations apply. ⁵
Carbon Dioxide (CO₂)	2.05 billion tons in 2010. ⁶	No CO ₂ policy.	2.57 + billion tons in 2009. ⁷ 2.47 + billion tons in 2013. ⁸ + additional tonnage through sequestration incentives.

¹ Prepared by David Lankton, Billy Pizer, Karen Palmer, and Dallas Burtraw. This document can be found at www.rff.org/multipollutant/.

² The Bush administration has proposed regulatory rules, similar to the policies in S. 131, to be published in the Federal Register by early February of 2004.

³ Under S. 150, the western region has a 0.275 million ton cap on SO₂ and the non-western region has a 1.975 million ton cap on SO₂.

⁴ Under S. 131 NO_x, the west (Zone 2: AK, AZ, CA, CO, HI, ID, KS, MN, MO course grid, MI, NE, ND, NM, NV, OK, OR, SD, TX west of I-35, UT, WA, WY) has a 0.715 million ton cap and the east (Zone 1: other States) has a 1.475 million ton cap. The eastern NO_x cap is reduced to 1.074 million tons in 2018.

⁵ For S. 843, from 2009 to 2012, mercury emissions cannot exceed 50% of the total mercury present in delivered coal at each affected facility. After 2012, the percentage drops to 30%. Also, emissions may not exceed an output-based rate determined by the administrator.

⁶ The CO₂ cap is specified in S. 150 and it approximates 1990 level CO₂ emissions from the electricity sector.

⁷ The S. 843 2009 allowance cap is equal to 2006 electricity sector CO₂ emissions as projected by EIA in the most recent report as of date of enactment. The number we report is EIA's *AEO 2003* projection for 2006.

⁸ The S. 843 2013 emissions cap is equal to actual 2001 electricity sector CO₂ emissions. The number we report is EIA's *AEO 2003* projection for 2001.

Features	S. 150 – Jeffords (109 th)	S. 131 – Clear Skies (109 th) ²	S. 843 – Carper (108 th)
Allowance Allocation Cap Changes and Additional Annual Allowance Availability			
High Costs “Safety Valve”	None except to exercise penalty provisions for excess emissions.	Units can purchase future allowances for current use: SO₂ : \$2,000 (per ton). NO_x : \$4,000 (per ton). Mercury : \$2,187.50 (per ounce). ⁹	None except to exercise penalty provisions for excess emissions.
Carryover From Title IV SO₂, NO_x SIP Call, and Other Programs	SO₂, NO_x : Banked pre-2009 Title I and IV NO _x and SO ₂ allowances can be traded 4:1 for S. 150 NO _x and SO ₂ allowances, respectively. SO₂, NO_x : SO ₂ and NO _x allowances banked as a result of meeting new source performance standards between 2001 and 2009 are considered full value S. 150 allowances of the appropriate type. CO₂ : CO ₂ permits generated by programs reducing emissions from an entire industrial sector may transfer to S. 150 CO ₂ program.	SO₂ : Banked pre-2010 Title IV SO ₂ allowances can be traded 1:1 for S.131 SO ₂ allowances. NO_x : Banked allowances from the regional, seasonal SIP Call trading program can be traded 1:1 beginning in 2008.	SO₂ : Banked pre-2009 Title IV SO ₂ allowances carryover 1:1 for S.843 SO ₂ allowances.
Additional Allocations for Out-of-Program Emission Reductions			CO₂ : Additional CO ₂ allowances for carbon sequestration are added to the annual CO ₂ allowance cap. See “CO ₂ -Specific Allocation Methods” below. CO₂ : Allowances from other international or U.S. CO ₂ reduction programs may be used. ¹⁰

⁹ For S. 131, purchased allowances reduce the allowances (of the purchased type) that would otherwise be allocated the second next year. If these allowances are not used, they are taken by the administrator (without refund). Prices are adjusted for inflation based on the Consumer Price Index. If more allowances are sold than would otherwise be allocated in the next year, then the allocation in the second next year is reduced (continuing as necessary). Proceeds are deposited in a Compliance Assistance Account.

¹⁰ S. 843 establishes an independent review board consisting of members from the EPA, DOE, state governments, the electricity sector, and environmental organizations that must certify additional CO₂ allowance allocations.

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Localized Reductions and National Ambient Air Quality Standards (NAAQS)	The administrator may limit localized emissions to avoid significant adverse health impacts. Non-Attainment: Units contributing to non-attainment of the ozone standard must submit three NO _x allowances for each ton of NO _x emitted.	S. 131 does not interfere with states continued authority over local compliance with NAAQS.	The federal or state government may limit emissions from a specific facility to address local air quality problems. Non-Attainment: After 2008, sources within non-attainment areas would no longer be required to obtain offsets for emissions.
Allowance Cap Reductions From Small Source Emissions	For 2009 and each following year, the allowance caps are reduced by the emissions from small electricity generators (< 15 MW) in the second preceding year.		
New Information “Re-opener”	Each year, any additional reductions the administrator finds necessary to protect public health and welfare may be made. A study will examine the difference between ambient air quality near units participating in the trading program and national average ambient air quality.		Within 15 years of enactment, the administrator must determine whether or not to adjust the annual allowance allocation caps. If it is determined that adjustments are required, they will take effect 20 years after enactment.
Allowance Banking and Trading Programs			
Banking Restrictions	Mercury: Cannot be banked.		
Trading Restrictions	SO₂: Allowances cannot be traded between West / East regions. Mercury: Cannot be traded.	NO_x: Allowances cannot be traded between the two regions.	
Western Regional Air Partnership (WRAP): AZ, CA, CO, ID, NV,		Two measures trigger the start of the WRAP program: 1) After 2013, the third year after which the SO ₂ emissions from	Two measures trigger the start of the WRAP program: 1) Any year from 2016 or later that is the third year after

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NM, OR, UT, WY		WRAP states are <i>projected</i> to exceed 271,000 tons in 2018 or later. OR 2) After 2018, beginning the third year after which <i>actual</i> SO ₂ emissions from states in the WRAP exceed 271,000 tons. As of the start date, the administrator will allocate 271,000 SO ₂ allowances to electricity-generating units (EGUs) in those states each year. Only these allowances may be used by EGUs in the WRAP states.	<i>projected</i> WRAP SO ₂ emissions exceed 271,000 tons OR 2) Any year 2021 or later that is the third year after <i>actual</i> WRAP SO ₂ emissions exceed 271,000 tons. As of the start date, SO ₂ emissions from WRAP states may not exceed the number of SO ₂ allowances allocated to units in WRAP states. The administrator will determine the method and number of these allocations by 2013.
Treatment of Pre-existing NO_x Programs	The regional summertime NO _x SIP Call trading program would exist separate from S. 150.	The regional summertime NO _x SIP Call trading program would terminate after 2007.	The regional summertime NO _x SIP Call trading program would exist separate from S. 843.
Potential for Trading Across Pollutants		By July 1, 2009, the administrator will submit a study to Congress regarding the environmental and economic effects of inter-pollutant trading of NO _x and SO ₂ .	
Allowance Allocation Methods			
In General	Auctions with revenues returned to consumers and allowances set aside for impacted sectors.	Grandfathering.	Grandfathering for SO ₂ and output-based allocations for NO _x , mercury and CO ₂ .
Methods Applicable to Multiple Pollutants	Existing Sources; SO₂, NO_x, CO₂: 10% of all SO ₂ , NO _x , and CO ₂ allowances in 2010 will be grandfathered to affected units based on their share of electricity generation in 2003. Allocations	Baseline Heat Input; NO_x, Mercury: Baseline heat input is the average annual heat input used by a unit during the 3 years in which the unit had the highest heat input for the period 1998 to 2002.	New Unit Reserve; SO₂, NO_x, Mercury, CO₂: The administrator and the Secretary of Energy will determine the size of the new unit reserve every five years for the next five-year period based on

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	<p>decrease by 1% until 2019.</p> <p>Transition Assistance; SO₂, NO_x, CO₂: 6% of all SO₂, NO_x, and CO₂ allowances in 2010 are allocated to non-electricity generating firms for transition assistance. This amount declines by 0.5% until 2019. Of these allowances, 80% go to dislocated workers and adversely impacted communities. The remaining 20% go to producers of electricity-intensive products.</p> <p>Renewable Generation and Clean Product Incentives; SO₂, NO_x, CO₂: Not more than 20% of all SO₂, NO_x, and CO₂ allowances will be allocated each year to renewable generation facilities and owners of energy-efficient buildings, producers of energy-efficient products, entities that carry out energy-efficient projects, owners of new clean fossil-fuel electricity generating units, and owners of combined heat / power generators.¹¹</p> <p>Household Allocations; SO₂,</p>	<p>See the NO_x and Mercury sections below for applicability.</p> <p>NO_x baseline heat input is adjusted by fuel type (1.0: coal, 0.55: gas and oil in Zone 1 from 2008 to 2017, 0.8: gas and oil in Zone 1 after 2017, 0.4: gas and oil in Zone 2).</p> <p>Mercury baseline heat input is adjusted by coal type (1.0 bituminous, 3.0 lignite, 1.25 subbituminous).</p> <p>Early Reduction Credits; NO_x, Hg: Additional allowances will be allocated- 1 allowance for each 1.05 ton (ounce for Mercury) reduction- for installation or modification of pollution control equipment or combustion technology improvements after the date of enactment but prior to 2008 (2010 for Mercury). No allowances will be allocated for equipment in operation or under construction prior to enactment,</p>	<p>projections of electricity output from new units.</p>

¹¹ For S. 150, renewable electricity-generating units receive an allocation based on renewable electricity production and the national average emissions per MWh by all electricity-generating facilities. For energy efficiency, the allocation is based on electricity or natural gas saved and the national average emissions per MWh or cubic foot of natural gas. For new, clean fossil-fuel-fired electricity generating units, allocations are based on the previous year's MWhs produced by new, clean fossil-fuel-fired electricity generating units and one half of the national average emissions per MWh. For combined heat and power electricity generating facilities, allocations are the product of Btu produced and put to use by each facility and the previous year's national average quantity of emissions per pollutant per Btu.

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	<p>NO_x, CO₂: Any allowances not allocated to other sectors are given to electricity consumers through an appointed trustee. Households receive allowances based on the number of people in the household and their state’s ratio of residential electricity consumption to national residential electricity consumption.</p>	<p>attributable to fuel switching, or required under federal or state regulation.</p>	
<p>SO₂ Specific Allocation Methods</p>	<p>Western Region: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.</p> <p>Eastern (Nonwestern) Region: Remaining States.</p>	<p>Grandfathering Rules; SO₂: 93% of allowances are given to affected electricity-generating units proportional to Title IV SO₂ allowance allocations.</p> <p>Non-Title IV Units and Additional Units; SO₂: 7% of the SO₂ allowances are allocated (based on baseline heat input¹² and SO₂ emission rates) to units that were non-Title IV units and additional units built after 2001. Priority of allocation is made on a first construction basis.</p> <p>Control Incentives; SO₂:¹³ A total of 250,000 allowances (out of the 4.5 million annual allocation) are allocated over the first three years of the program as incentives for SO₂ control technology.</p>	<p>Existing Sources: SO₂: Existing fossil-fuel-fired units (includes Title IV existing units and units built at least three years before the current year) receive allowances based on Title IV allowance allocation rules, pro-rated to comply with the difference between the S. 843 allowance cap and the new unit reserve for SO₂.¹⁴</p> <p>New Sources: SO₂. New units receive allowances based on future regulations promulgated by the administrator.</p>

¹² Heat input adjustments for units: constructed before 2001: 0.4 (coal), 0.2 (oil), 0.5 (other), constructed between 2001 and 2005: 0.19 (coal and oil), 0.005 (other), constructed after 2005: national emission standards as detailed in section 481 of the Clear Skies Act of 2005.

¹³ For S. 131, in the first three years, the number of grandfathered SO₂ allowances is reduced by 83,334 (83,333 in the second and third years) allowances. These allowances are offered via competitive bidding to coal-fired facilities that reduce their SO₂ emissions through improved technology.

¹⁴ For S. 843, allocation to existing units that are not specifically mentioned in Title IV is determined by the administrator on a fair and equitable basis.

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<p>NO_x Specific Allocation Methods</p>		<p>Grandfathering Rules; NO_x: 95% of allowances (in each region) are given to affected electricity-generating units based on baseline heat input relative to total baseline heat input across all affected units.</p> <p>Additional Units; NO_x: 5% of the NO_x allowances (in each region) are allocated (based on baseline heat input) to units that commence operation after enactment of S. 131. These allowances are allocated on a first construction basis.</p>	<p>Existing Sources; NO_x: Existing fossil-fuel-fired units receive allowances equal to the product of 1.5 pounds of NO_x per MWh times the quotient of the average quantity of electricity generated during the most recent three-year period in MWh divided by 2,000 pounds of NO_x per ton. If this total is not equal to the difference between the allowance cap and the new unit reserve for NO_x, allowances are allocated on a pro-rata basis.</p> <p>New Sources; NO_x: New units receive allowances based on projected emissions.</p>
<p>Mercury Specific Allocation Methods</p> <p>Facility Specific Mercury Emission Limitations</p>	<p>Emissions Limitations; Mercury: Mercury emissions are not to exceed 2.48 grams per 1,000 MWh. This is an emissions limitation, not an allocation of allowances, and may not be banked or traded.</p> <p>Emissions Averaging: Allowed at facilities that contain multiple coal units.</p> <p>Coal Type: Does not differentiate between facilities firing different types of coal.</p>	<p>Grandfathering Rules; Mercury: 95% of allowances are given to affected electricity-generating units based on baseline heat input relative to total baseline heat input across all affected units.</p> <p>Additional Units; Mercury: 5% of the Mercury allowances are allocated (based on baseline heat input) to units that commence operation after enactment of S. 131. These allowances are allocated on a first construction basis.</p>	<p>Existing Sources; Mercury: Existing coal-fired units receive allowances equal to the product of 0.0000227 pounds of mercury per MWh multiplied by the average quantity of electricity generated during the most recent 3-year period in MWh. If this total is not equal to the difference between the allowance cap and the new unit reserve for mercury, allowances are allocated on a pro-rata basis.</p> <p>New Sources; Mercury: New units receive allowances based on projected emissions.</p>

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CO₂ Specific Allocation Methods	Sequestration Incentives; CO₂: Not more than 0.075% of total CO ₂ allowances shall be allocated to encourage biological carbon sequestration and not more than 1.5% of total CO ₂ allowances shall be allocated to encourage geological carbon sequestration.		Sequestration Incentives; CO₂: Additional CO ₂ allowances are allocated for carbon sequestration and for programs to reduce greenhouse gas emissions. In 2009, allocations are made for projects from 1990 to 2008, and these allowances are limited to 10% of the CO ₂ allowance cap for 2009. After 2009, allocations are made for current projects, and there is no limitation on the number of additional allowances. Existing Sources; CO₂: Existing fossil-fuel-fired, nuclear, ¹⁵ and renewable ¹⁶ units receive allowances equal to their average generation over the most recent three-year period divided by the total average generation over the same period by all such units multiplied by the difference between the allowance cap and the new unit reserve for CO ₂ . New Sources; CO₂: New fossil-fuel-fired and renewable units receive allowances based on their projected share of total generation.
Compliance With Legislation			
Penalties for	SO₂, NO_x, CO₂: Three times the	SO₂: \$2,000 per ton	SO₂, NO_x, CO₂, Mercury: Excess

¹⁵ For S. 843, nuclear units receive (and must submit) allowances based only on their incremental generation from 1990 levels.

¹⁶ For S. 843, renewable units include wind, organic waste (excluding incinerated municipal solid waste), biomass, fuel cells, hydroelectric, geothermal, solar thermal, photovoltaic, and other non-fossil fuel, non-nuclear sources.

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Excess Emissions	<p>excess emissions in tons (or failed allowance submissions) multiplied by the average annual market price for the appropriate allowances.</p> <p>Mercury: Three times the excess emissions in grams multiplied by the average cost of mercury controls.</p>	<p>NO_x : \$4,000 per ton</p> <p>Mercury: \$2187.50 per ounce</p> <p>If payment is not made within 30 days, or if excess emissions are not offset within a period of one year (or a longer period as determined by the administrator), then the penalty is multiplied by 1.5.</p> <p>Penalties are adjusted by the CPI.</p>	<p>emissions must be offset in a future year, as determined by the administrator. Also:</p> <p>SO₂: \$2,000 (1990\$) penalty for each ton of excess emissions.</p> <p>NO_x: \$5,000 penalty for each ton of excess emissions.</p> <p>CO₂: \$100 penalty for each ton of excess emissions.</p> <p>Mercury: \$10,000 penalty for each pound of excess emissions.</p> <p>SO₂, NO_x, CO₂, Mercury: Fees are adjusted by the CPI.</p>
Monitoring and Record Keeping Requirements	<p>Each affected facility must install and operate a continuous emissions monitoring system. Facilities must provide the administrator with data on emissions and emissions per MWh for each covered pollutant. The administrator will keep an inventory of emissions from all small electricity-generating facilities (less than 15 MW). Coal-fired facilities with an aggregate generating capacity of 50 MW or more must monitor ambient air quality within a 30-mile radius of the facility.</p>	<p>Each affected facility must install and operate a continuous emissions monitoring system. Facilities must provide the administrator with data for opacity, volumetric flow, and emissions of SO₂, NO_x, and mercury.</p>	<p>The administrator will promulgate regulations for monitoring requirements.</p> <p>SO₂: Title IV reporting for SO₂ is required.</p> <p>NO_x, CO₂, Mercury: At least quarterly, facilities must submit to the administrator a report on the emissions of NO_x, CO₂, and mercury.</p>
Modernization and the New Source Review Program (NSR)	<p>Beginning on January 1, 2014, or 40 years after the beginning of generation at a facility (whichever date is later), the facility is subject</p>	<p>A unit whose hourly emissions of a pollutant increases at maximum capacity from modifications must either meet the national emissions</p>	<p>NSR: Construction of a new unit (including existing boiler replacement) or any modification to an existing unit that increases</p>

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Lowest Achievable Emissions Rate (LAER) and Best Available Control Technology (BACT)	to emissions limitations reflecting best available control technology (BACT) on a new source facility of the same generating capacity.	standards for affected units or apply best available control technology. Facilities that are more than 50 kilometers from a Class I area can exempt themselves from new source review and best available retrofit control technology if they commit within three years to meeting a limit for particulate matter (PM) of .03 lb/MMBtu, have begun to operate control technology to reduce PM emissions, or otherwise reduce PM emissions according to best operational practices. New or reconstructed units must meet national emissions standards as detailed by section 481 of the Clear Skies Act of 2005.	the hourly emissions rate of an NSR covered pollutant will subject that facility to the NSR program. Beginning in 2020, each facility which began construction before August 17, 1971 must meet performance standards of 4.5 lbs / MWh and 2.5 lbs / MWh for SO ₂ and NO _x , respectively. LAER and BACT: Identified biennially. The cost of LAER may not exceed twice that of BACT. Non-Attainment: As noted above, sources within non-attainment areas would no longer be required to obtain offsets for emissions after 2008.
Non-NSR Regulatory Relief		The bill delays until 2011 EPA action on petitions by downwind states to reduce emissions in upwind states under section 126 of the Clean Air Act.	Some units would be exempt from mercury emissions standards under section 112 of the Clean Air Act (CAA) and visibility protection requirements (haze) under section 169 of the CAA.